

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
20 October 2005 (20.10.2005)

PCT

(10) International Publication Number  
**WO 2005/099117 A1**

(51) International Patent Classification<sup>7</sup>: **H04B 1/707**,  
H04L 25/03

(74) Agents: **TRIPOLI, Joseph, S.** et al.; Thomson Licensing  
Inc., Two Independence Way, Suite #200, Princeton, NJ  
08540 (US).

(21) International Application Number:  
PCT/US2004/007676

(81) Designated States (*unless otherwise indicated, for every  
kind of national protection available*): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

(22) International Filing Date: 9 March 2004 (09.03.2004)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant (*for all designated States except US*): **THOM-  
SON LICENSING S.A.** [FR/FR]; 46, quai A. Le Gallo,  
F-92648 Boulogne (FR).

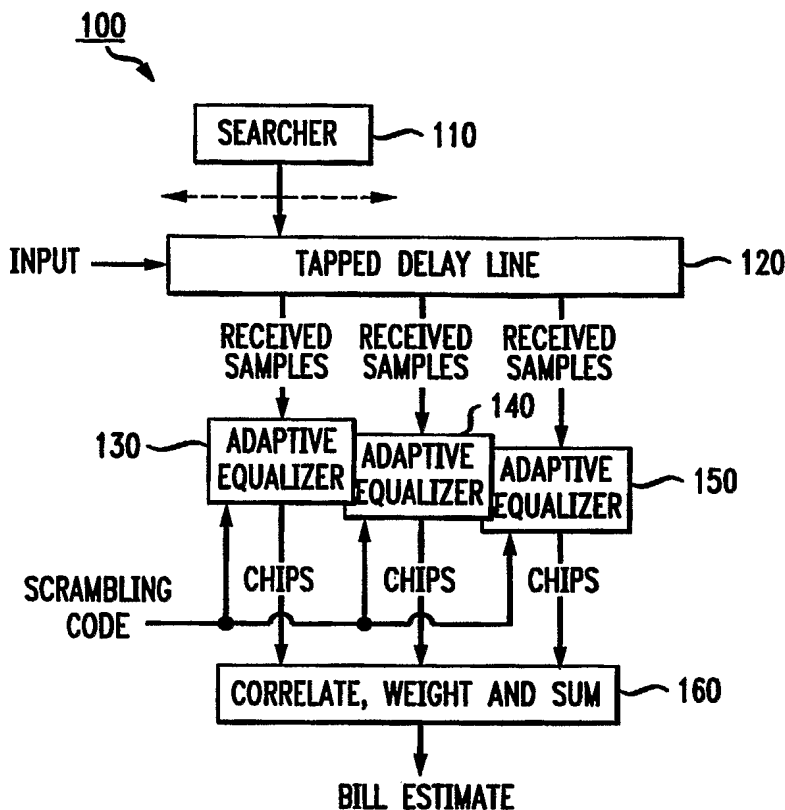
(84) Designated States (*unless otherwise indicated, for every  
kind of regional protection available*): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Euro-  
pean (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,  
GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK,

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **MARGETTS,  
Adam, Robert** [US/US]; 1 West Drive, Apt. C2, Prince-  
ton, NJ 08540 (US). **KEEL, Alton, Shelbourne** [US/US];  
4013 Long Leaf Drive, Melbourne, FL 32940 (US).

[Continued on next page]

(54) Title: HYBRID RAKE/EQUALIZER RECEIVER FOR SPREAD SPECTRUM SYSTEMS



(57) Abstract: There is provided a hybrid rake/equalizer receiver for correlating a delay spread in a spread spectrum system. The hybrid rake/equalizer receiver includes a plurality of adaptive equalizers, each for filtering different regions of the delay spread that have an energy level above a pre-specified threshold to respectively provide equalized-descrambled chip sequences for correlation. Equalizer coefficients respectively corresponding to the plurality of adaptive equalizers are updated individually.



TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**Published:**

— *with international search report*